

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed June 27, 2006. Claims 1-6, 9, 11-14, and 17-20 are pending in this application and are rejected in the Office Action. For at least the reasons discussed below, Applicant respectfully requests reconsideration and favorable action in this case.

Section 103 Rejections

The Examiner rejects Claims 1-5, 9, 11-13, 17, and 20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,549,311 issued to Hakki et al. ("*Hakki*") in view of U.S. Publication No. 2002/0036814 issued to Mueller et al. ("*Mueller*").

Independent Claim 1, as amended, recites the following limitations:

A method for processing information in a receiver of a multichannel optical communication system, comprising:

receiving a wavelength division multiplexed (WDM) signal having a symbol rate and comprising a plurality of phase modulated optical information signals having a minimum channel spacing that is greater than $(N+0.4)B$ and less than $(N+0.6)B$, where B comprises the symbol rate of the WDM signal and N is an integer;

demultiplexing the phase modulated optical information signals from the WDM signal;

converting each of the phase modulated optical information signals to an intensity modulated optical information signal using an asymmetric interferometer, wherein the asymmetric interferometer comprises two interferometer paths having a path length difference operable to create a one symbol period shift in the optical information signal and wherein the asymmetric interferometer has a wavelength dependent loss that increases the rejection of neighboring channels of the WDM signal when the channel spacing of the signal is greater than $(N+0.4)B$ and less than $(N+0.6)B$; and

recovering a data signal from the intensity modulated optical information signal.

Independent Claims 9 and 17 recites similar, although not identical, limitations.

In order to establish a *prima facie* case of obviousness, three requirements must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge available to one skilled in the art, to modify a reference or combine

multiple references; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or combination of references) must teach or suggest all of the claim limitations. M.P.E.P. § 2143. In the present case, a *prima facie* case of obviousness cannot be maintained at least because (i) neither *Hakki* nor *Mueller* disclose each and every limitation of Claims 1, 9 and 17, and (ii) neither *Hakki* nor *Mueller* provides a suggestion or motivation to combine the disclosure of the references in the manner in which the Examiner is combining them.

First, neither *Hakki* nor *Mueller* disclose each and every limitation of Claims 1, 9 and 17. For example, Claim 1 has been amended to recite that the claimed asymmetric interferometer “comprises two interferometer paths having a path length difference operable to create a one symbol period shift in the optical information signal” and that the asymmetric interferometer “has a wavelength dependent loss that increases the rejection of neighboring channels of the WDM signal when the channel spacing of the signal is greater than $(N+0.4)B$ and less than $(N+0.6)B$.” The first of these limitations was added from Claim 5. With respect to this limitation, the Examiner states that it is disclosed in *Hakki* at Column 3, lines 16-26. However, *Hakki* only discloses that the phase of one arm of an interferometer is delayed relative to another arm by a generic period τ . It does not disclose specifically that the interferometer paths having a path length difference operable to create a *one symbol period shift* in the optical information signal. Furthermore, neither *Hakki* nor *Mueller* disclose an interferometer that has a wavelength dependent loss that increases the rejection of neighboring channels of the WDM signal when the channel spacing of the signal is greater than $(N+0.4)B$ and less than $(N+0.6)B$, as further recited by Claim 1 (and Claims 9 and 17).

Second, there is no suggestion to combine the references in the manner proposed by the Examiner. The M.P.E.P. sets forth a strict legal standard for finding obviousness based on a combination of references. According to the M.P.E.P., “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge [that was] generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. 2143.01. The “fact that references can be combined or modified does not render the resultant

combination [or modification] obvious unless the prior art also suggests the desirability of the combination” or modification. *Id.* (emphasis in original).

The governing Federal Circuit case law makes this strict legal standard even more clear. According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation to combine . . . prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000)). “Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* In *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that proper evidence of a teaching, suggestion, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted).

In the present case, the Examiner is attempting to combine a reference (*Hakki*) that discloses a specific communication system using phase modulated WDM signals and interferometers used in conjunction with receiving the phase modulated WDM signals with another reference (*Mueller*) that does not show such a communication system but that discloses some signals that have the recited channel spacing used in an entirely different context. Although Applicants understand the Examiner's argument on page 5 of the Office Action regarding the *Ex parte Obiya* case, Applicants respectfully submit that the prior art

never suggested the use of an interferometer as claimed in conjunction with phase modulated WDM signals having the recited channel spacing. Thus, the Applicants are claiming a novel combination of an interferometer have particular characteristics with a signal having a particular channel spacing. Applicants respectfully submit that such a combination is not obvious in light of nor present in the cited prior art, since neither reference suggests this combination.

For at least these reasons, Applicants respectfully request reconsideration and allowance of Claims 1, 9 and 17, as well as the claims that depend from these independent claims.

The Examiner also rejects Claims 6, 14, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over *Hakki* in view of *Mueller* as applied to claims 1, 9, and 17 and further in view of U.S. Patent No. 5,483,368 issued to Ohshima ("*Ohshima*").

Each of these claims depends from one of independent Claims 1, 9 or 17, which Applicants believe to be in condition for allowance. Thus, Applicants submit that Claims 6, 14, 18, and 19 are also allowable at least because of their dependence on an allowable claim (and because *Ohshima* also does not disclose, teach or suggest the missing limitations of Claims 1, 9 and 17). Favorable action is respectfully requested.

CONCLUSION

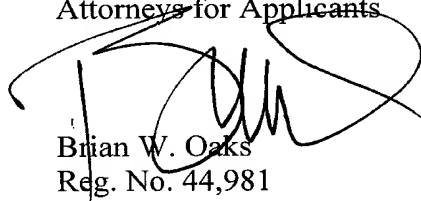
Applicants have made an earnest attempt to place this case in condition for allowance. For at least the foregoing reasons, Applicants respectfully request full allowance of all the pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Brian W. Oaks, Attorney for Applicants, at the Examiner's convenience at (214) 953-6986.

Although Applicants believe no fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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